Volpe

The National Transportation Systems Center

NYC Citywide Administrative Services

Advancing transportation innovation for the public good

October 26, 2016

U.S. Department of Transportation
Office of Research and Technology
John A. Volpe National Transportation Systems Center

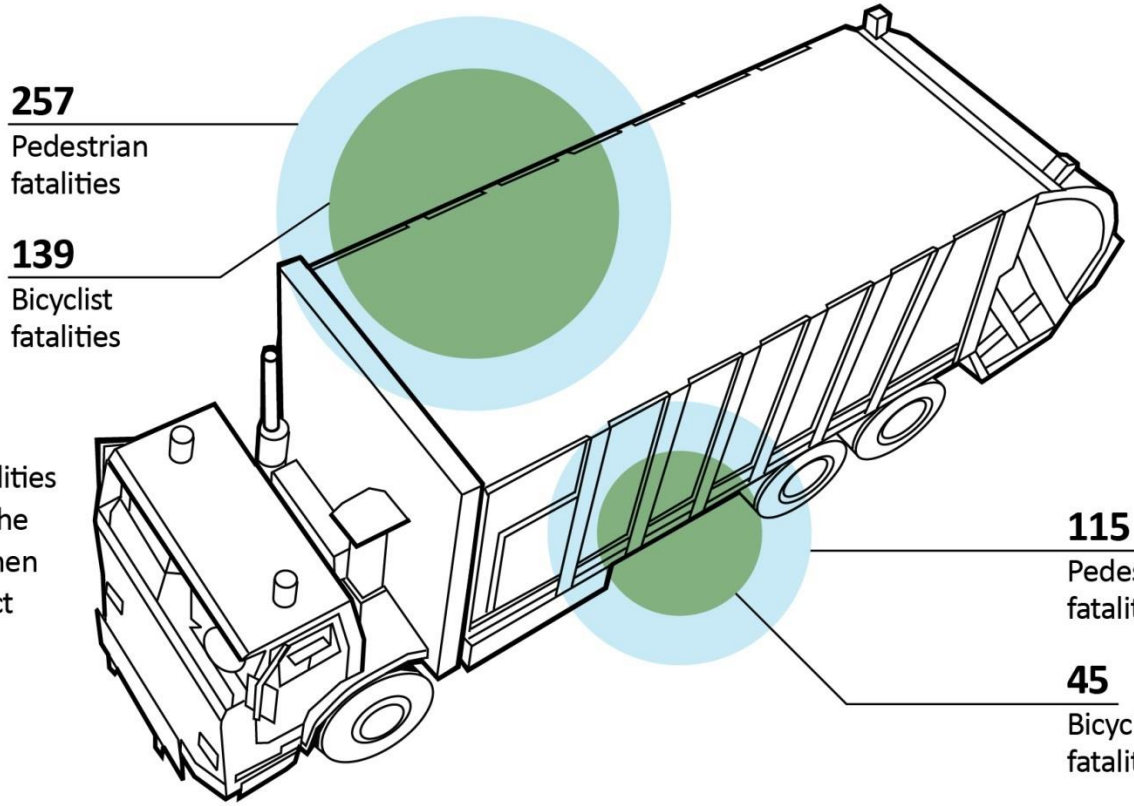
Volpe, The National Transportation Systems Center

- Unique agency within U.S. DOT
- 100% fee-for-service
- All modes of transportation
- Cross-disciplinary
- 570 federal staff,
  400 onsite contractors
- Based in Cambridge, MA

Large truck urban safety context

During a recent 5-year period, 1,746 pedestrians and bicyclists in the U.S. were killed from impacts with large trucks

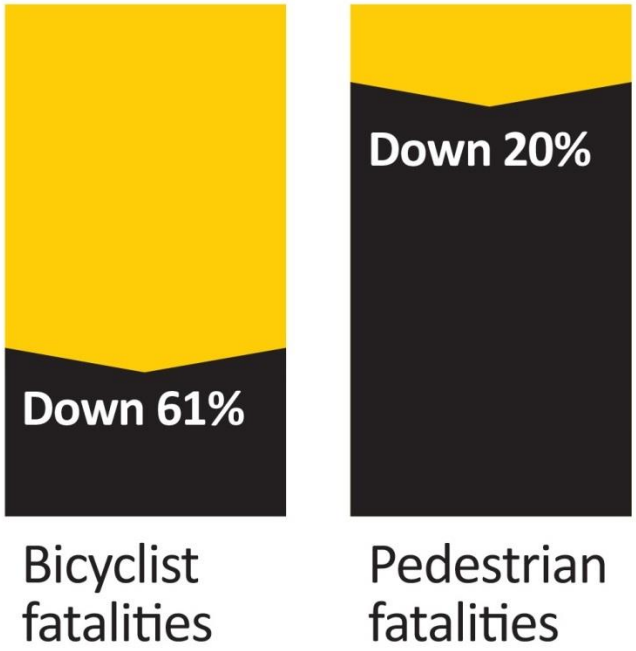
32% of these happened after an initial impact with the side of a truck.

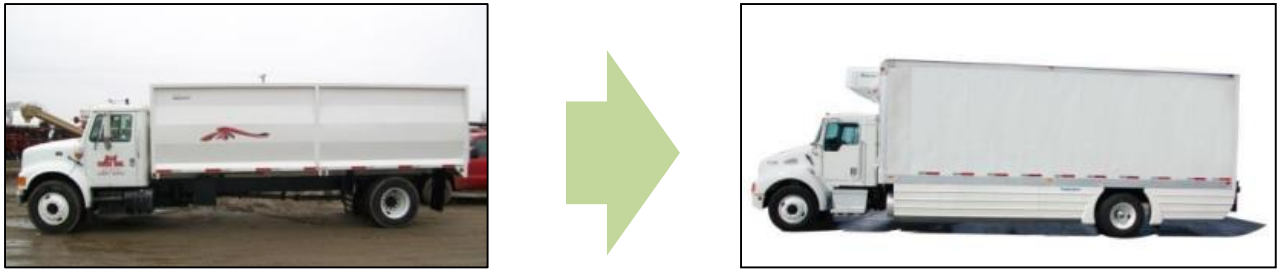


37% of bicyclist fatalities happen on the right side when trucks impact bicyclists.

U.S. DOT/Volpe Image

Side guard safety benefits





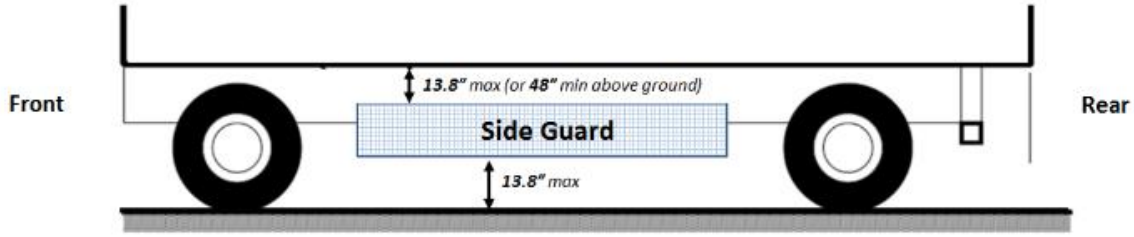
Side guard design precedents

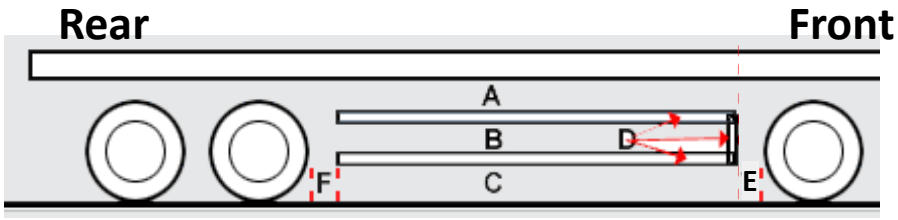
Narrow rails

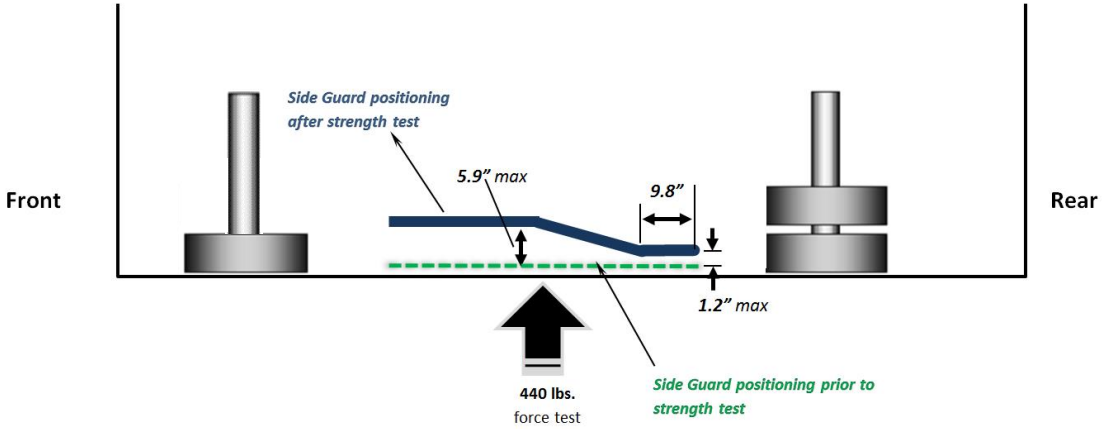
Wide rails

Panels

Volpe & NYC developed recommended standards







Volpe/City T2 Partnerships

Deployed

Deployment Pending

Deployed separately

Representative U.S. sideguard installs

Federal voluntary standard

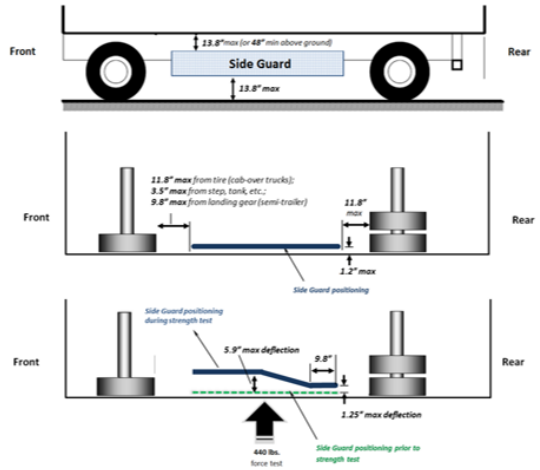
Volpe The National Transportation Systems Center

Truck Side Guard Specifications

Recommended Standard DOT-VNTSC-OSTR-16-05

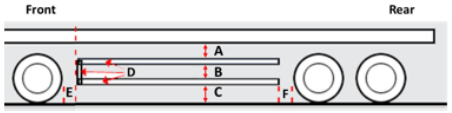
This document is intended to be used by (1) public or private medium/heavy-duty truck fleets considering adding side guards; (2) jurisdictions or customers that require side guards through policy or procurement; (3) manufacturers of side guards; and (4) truck manufacturers and dealers.[1] The specifications below are based on previously published Volpe recommendations (Reports DOT-VNTSC-DCAS-14-01 and DOT-VNTSC-SFMTA-16-01) and may be referred to as the "Volpe side guard standard" or "Volpe side guard specifications." This standard can be used as a basis for design, production, testing, review, and procurement of side guards and side-guard-equipped vehicles.

1. Dimensional and strength specifications



A side guard meets the strength requirement if it is capable of withstanding **440 pounds** of force applied perpendicularly to any part of its surface by the center of a flat, circular plate of diameter no greater than **8.7 inches**, such that the deflection of the loaded side guard measured at the center of the plate does not exceed (1) **5.9 inches** anywhere, or (2) **1.25 inches** in the rearmost **9.8 inches**. A manufacturer may also demonstrate compliance using a valid engineering calculation, such as finite element analysis.[2]

2. Additional dimensional specifications for rail-style side guards



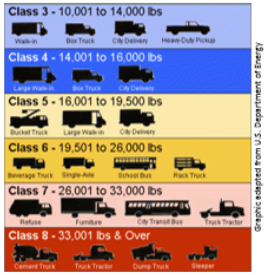
A	13.8 inches max
B	11.8 inches max
C	13.8 inches max
D	4.0 inches min
E	11.8 / 3.5 inches max*
F	11.8 inches max

*The gap between the side guard's leading edge and the wheel, wheel arch, or other permanent vehicle structure should not exceed **11.8 inches**. A **turned-in vertical bar** connecting the forward ends of the horizontal rails should be incorporated if the forward gap exceeds **3.5 inches**. The bar need not be turned in or can be omitted if the distance is less than 3.5 inches.

3. Vehicle weight threshold and flexibility of design

Side underride protection should be included on **Class 3** and above vehicles, which have a gross vehicle weight rating (GVWR) of **10,000 pounds** and higher.

Acceptable side underride protection can be provided by **any combination** of vehicle body, fuel tanks, tag axles, tool boxes, or purpose-built side guards comprising a smooth surface flush with the vehicle sidewall, meeting the Volpe dimensional and strength specifications set forth above.



[1] This document was prepared for the Office of the Assistant Secretary of Research and Technology.

[2] A third option for demonstrating strength compliance is type approval by the United Kingdom Department for Transport Vehicle Certification Agency or other recognized side guard homologation with equal or greater stringency. A side guard with such type approval that also meets the Volpe dimensional criteria may be considered to meet the Volpe standard.

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www.volpe.dot.gov/side-guards

Volpe

DCAS-NYC Fleet

NYC Citywide Administrative Services

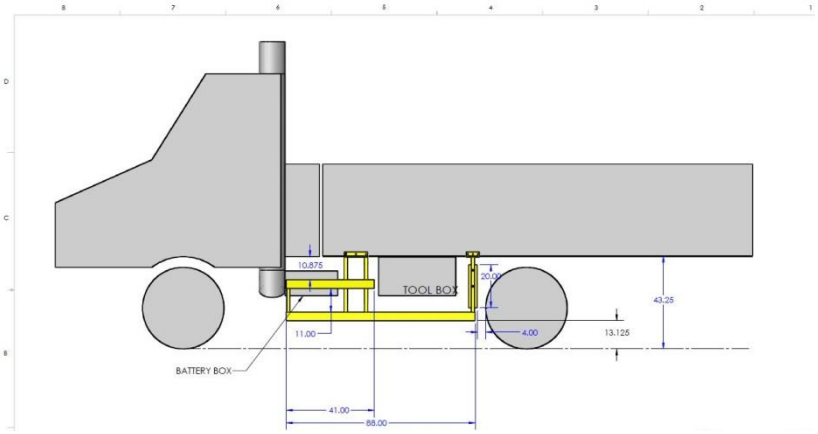
- Largest municipal fleet in the country.
  - 28,000 owned/leased vehicles.
- DCAS Fleet works directly with the 10 largest agencies and directly manages 40 agencies with smaller fleets.
  - Involved with safety, sustainability, transparency, & shared services.
- Current focus on Vision Zero
  - End traffic deaths and injuries
- Over 550 Side Guards installed.
  - Original goal of 240, 10% of eligible truck fleet.

VISION ZERO
nyc.gov/visionzero

NYC Side Guard Installs

NYC Side Guard Installs

Implementation



- Volpe Report
- Manufacturer Research and Selection
  - Installation approach
- Installer Selection
- Selection of pilot units
  - Agency cooperation
- Installer training
  - Manufacturer/Installer partnership
- Volpe Feedback

The Learning Curve

- Open lines of communication
  - Feedback
- Challenges
  - No two truck are the same
  - Ladder, boxes, access
  - New discoveries
- Willingness to test
- Common goal

Looking Toward the Future

- New competition
- New designs and approaches
  - Installer VS manufacturer customization
  - Rail, panel, removable, custom
- Local Law
- OEM application

Questions?

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